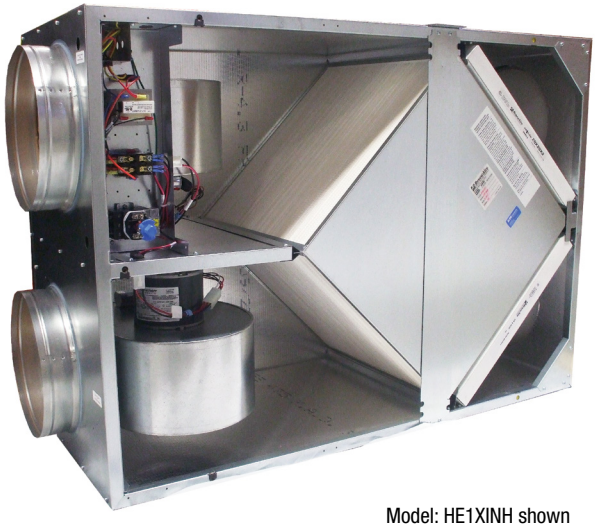
RenewAire
Energy Recovery Ventilation

HE SERIES ERV

Installation, Operation and Maintenance Manual

HE1XINH
HE1XINV



Model: HE1XINH shown

Model: HE1XINV shown

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ETL LISTED c US
Intertek

⚠ WARNING

Three phase motors are NOT suitable for use with solid state speed control.

Single phase EC motors are NOT suitable for use with solid state speed control. They already have speed control built into the motor electronics.

⚠ AVERTISSEMENT

Moteurs de trois phase ne convient pas pour utilisation avec regulateur de vitesse electronique.

Moteurs d'une phase de l'EC ne conviennent pas pour une utilisation avec regulateur de vitesse electronique. Ils ont déjà le contrôle de vitesse intégré dans le moteur électronique.

⚠ WARNING

ARC FLASH AND ELECTRIC SHOCK HAZARD

Arc flash and electric shock hazard. Disconnect all electric power supplies, verify with a voltmeter that electric power is off and wear protective equipment per NFPA 70E before working within electric control enclosure. Failure to comply can cause serious injury or death.

Customer must provide earth ground to unit, per NEC, CEC and local codes, as applicable.

Before proceeding with installation, read all instructions, verifying that all the parts are included and check the nameplate to be sure the voltage matches available utility power.

The line side of the disconnect switch contains live high-voltage.

The only way to ensure that there is NO voltage inside the unit is to install and open a remote disconnect switch and verify that power is off with a volt meter. Refer to unit electrical schematic.Follow all local codes.

⚠ WARNING

RISK OF INJURY OR DAMAGE

Motor may have a manual reset thermal protector. Disconnect power before servicing or resetting motor thermal protector. Use caution, motor may be hot. Allow the motor to cool before resetting the thermal protector.

If the motor thermal protector tripped, correct the issue that caused the motor to overheat (e.g. over motor rated amperage or locked rotor).

If the motor has a manual reset thermal protector, the red thermal protector reset button is located on the motor body, on or near the lead end of the motor. If the button does not reset, the motor may still be too hot. Allow the motor to fully cool to reset the thermal protector, you should feel or hear a click when the thermal protector resets while pushing the reset button.

⚠ CAUTION

RISK OF ELECTRIC SHOCK OR EQUIPMENT DAMAGE

Whenever electrical wiring is connected, disconnected or changed, the power supply to the ERV and its controls must be disconnected. Lock and tag the disconnect switch or circuit breaker to prevent accidental reconnection of electric power.

⚠ CAUTION

RISK OF CONTACT WITH HIGH SPEED MOVING PARTS

Disconnect all local and remote power supplies, verify with a voltmeter that electric power is off and all fan blades have stopped rotating before working on the unit.

Do not operate this unit with any cabinet panels removed.

IMPORTANT

This equipment is to be installed by following industry best practices and all applicable codes. Any damage to components, assemblies, subassemblies or the cabinet which is caused by improper installation practices will void the warranty.

IMPORTANT

This unit is intended for general ventilating and heating only. Do not use to exhaust hazardous or explosive materials and vapors. Do not connect this equipment to range hoods, fume hoods or collection systems for toxics.

IMPORTANT

This unit is for ventilating finished structures only. It is not to be used until after all construction has been completed and construction debris and dust are cleaned from the Occupied Space.

READ AND SAVE THIS MANUAL/LIRE ET CONSERVER CE MANUEL

NOTICE

This manual contains space for maintaining written records of unit maintenance and/or repairs. See Section 7.7 Maintenance Records. At the time the ERV is commissioned, a maintenance schedule should be developed by the user to incorporate monthly and seasonal maintenance and include start up maintenance tasks as described in this manual.

UNIT INFORMATION

Record information as shown below.

In the unlikely event that factory assistance is ever required, information located on the unit label will be needed.

Locate the RenewAire unit label found on the outside of the unit.

NOTE: This information is for purposes of identifying the unit-specific option data from the Option Code.

NOTE: This page is to be completed by the installing contractor. The completed document is to be turned over to the owner after start up.

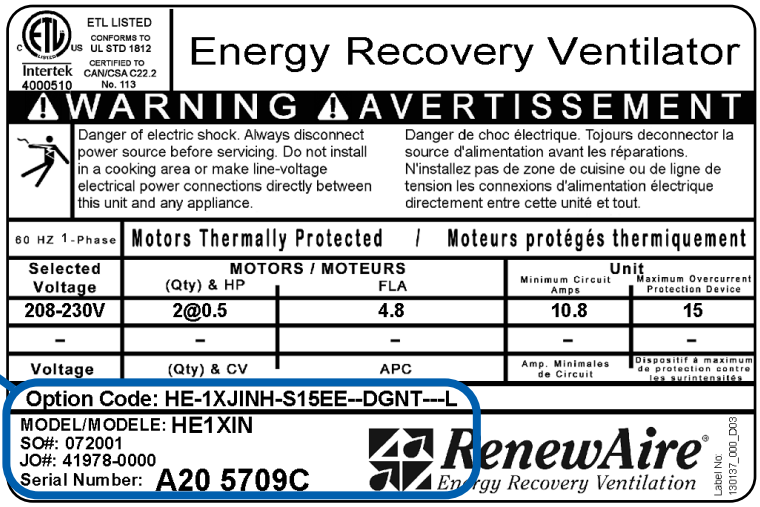
Option Code:

H	E	-	1	X	J	I	N		-						-	-							

Serial Number:

SO #:

UNIT INFORMATION

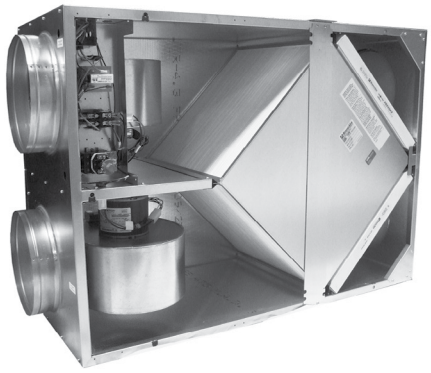


UNIT LABEL (TYPICAL)

HE 1XINH

Energy Recovery Ventilator
Standard

INDOOR UNIT



Energy Recovery Core is AHRI Certified®

AHRI CERTIFIED®
www.ahridirectory.org
Air-to-Air ERV
AHRI Standard 1060
Energy Recovery COMPONENT is certified. Actual performance in packaged equipment may vary.

SPECIFICATIONS

Ventilation Type:
Static plate, heat and humidity transfer

Typical Airflow Range: 250-925 CFM

AHRI 1060 Certified Core: One L125-G5

Standard Features:
Non-fused disconnect
24 VAC transformer/relay package
Cross-core differential pressure ports

Filters:
Total qty. 2, MERV 8: 20" x 20" x 2"

Unit Weight:
204-275 lbs., varies by option(s)

Max. Shipping Dimensions & Weight (on pallet):
63" L x 30" W x 56" H
325 lbs.
Accessories box shipped loose on top of unit.

Motor(s):
Qty. 2, 0.75 HP ea., Direct drive blower/standard motor packages

Options:
Qty. 2, Variable Speed/ECM - Direct Drive Motors (see HE1XINH EC Motor submittal) - 0.5 HP, 120V/1Ph/60HZ, 0.5 HP, 208-230V/1Ph/60HZ
Independent blower control
Fused disconnect
Integrated programmable controls - enhanced, premium
Bypass economizer damper (see bypass DIM drawing) - dry-bulb temperature controls (standard), enthalpy controls (option)
Low-leakage motorized isolation dampers - OA, RA or both airstreams
Qty. 2, Factory mounted filter alarms - both airstreams
Double wall construction
Exterior paint - white, custom colors

Accessories:
Filters - MERV 13, 2" (shipped loose)
Backdraft damper - 12"
Automatic balancing damper - 4", 5", 6"
Motorized isolation damper - both airstreams
Hooded wall vent 12" - galvanized, paintable galvanneal
Solid state speed control kit - 115V, 208-230V (1 required per motor)
Digital time clock - wall mount (TC7D-W), in exterior enclosure (TC7D-E)
Carbon dioxide sensor/control - wall mount (CO2-W), duct mount (CO2-D)
IAQ sensor - wall mount (IAQ-W), duct mount (IAQ-D)
Motion occupancy sensor/control - ceiling mount (MC-C), wall mount (MC-W)
Smoke Detector - duct mount (SD-D)
Electric duct heater - RH series (1-11.5 kW); EK series (1–175 kW); designed for indoor ductwork installation only
Indirect gas-fired duct furnace - GH series (50-400 MBH), installed downstream of any fans

AIRFLOW PERFORMANCE

Motor HP Phase	External Static Pressure (Inches Water Column)						
	0.0	0.25	0.5	0.75	0.9	1.25	1.5
0.75 Single Phase	970 CFM 1,490 Watts	925 CFM 1,375 Watts	860 CFM 1,270 Watts	795 CFM 1,160 Watts	750 CFM 1,090 Watts	635 CFM 950 Watts	480 CFM 825 Watts
0.75 Three Phase	970 CFM 1,246 Watts	925 CFM 1,158 Watts	860 CFM 1,039 Watts	795 CFM 928 Watts	750 CFM 856 Watts	635 CFM 691 Watts	480 CFM 509 Watts

Note: Watts is for the entire unit (two motors).

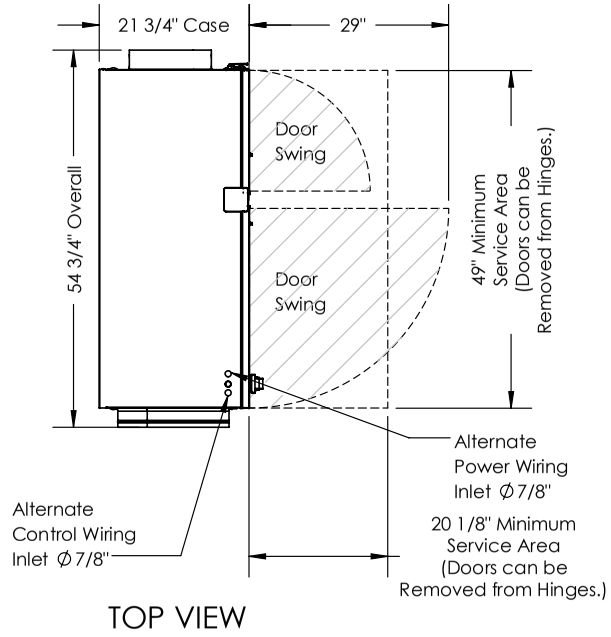
Note: Airflow performance includes effect of clean, standard filter supplied with unit.

ELECTRICAL DATA

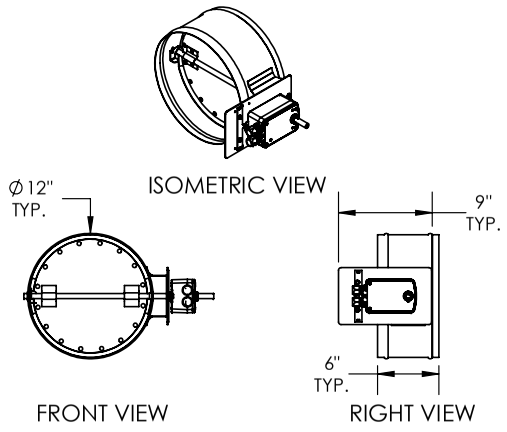
HP	Volts	HZ	Phase	FLA per motor	Min. Cir. Amps	Max. Overcurrent Protection Device
0.75	120	60	Single	9.0	20.3	25
0.75	208-230	60	Single	4.5	10.1	15
0.75	277	60	Single	3.9	8.8	15
0.75	208-230	60	Three	1.7-2.3	5.2	15
0.75	460	60	Three	1.15	2.6	15

Specifications may be subject to change without notice.

HE1XINH Energy Recovery Ventilator Standard



TOP VIEW



(OA/RA) DAMPER OPTION (QTY.2)
(SHIPPED LOOSE)
SCALE 1:16

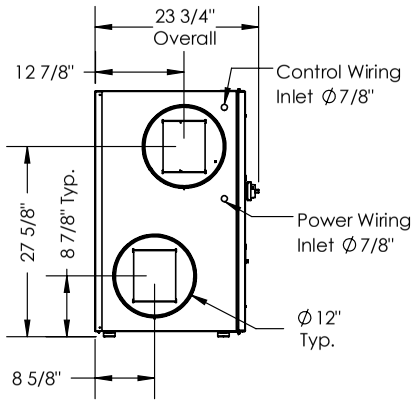
ABBREVIATIONS
EA: Exhaust Air to Outside
OA: Outside Air Intake
RA: Room Air to be Exhausted
FA: Fresh Air to Inside

INSTALLATION ORIENTATION
Unit may be installed in any orientation.

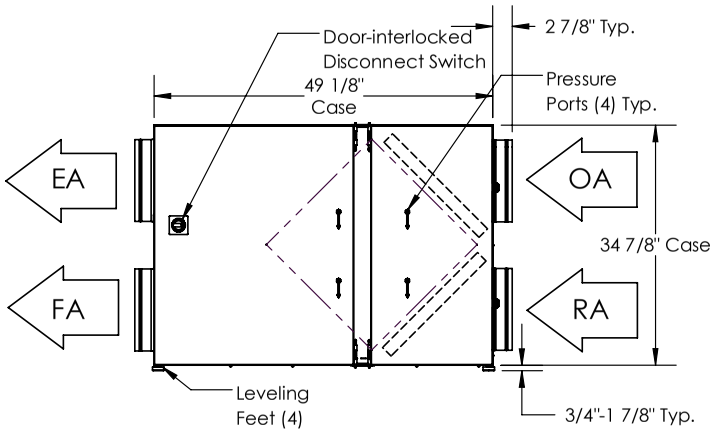
NOTE
1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE ROUNDED TO THE NEAREST EIGHTH OF AN INCH.

2. SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE.

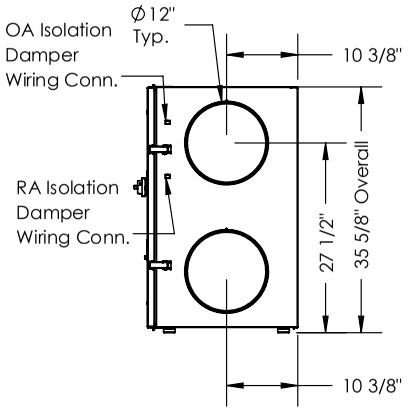
3.DAMPERS SHIPPED LOOSE, FIELD INSTALLATION REQUIRED.



LEFT VIEW



FRONT VIEW



RIGHT VIEW

AIRFLOW CONFIGURATION
Available as shown in dimension drawing.

UNIT MOUNTING & APPLICATION
Can be mounted in any orientation. RA/EA airstream can be switched with OA/FA airstream unless certain options are selected.

HE 1XINV

Energy Recovery Ventilator
Standard

INDOOR UNIT

Energy Recovery Core is AHRI Certified®

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SPECIFICATIONS

Ventilation Type:
Static plate, heat and humidity transfer

Typical Airflow Range: 250-925 CFM

AHRI 1060 Certified Core: One L125-G5

Standard Features:
Non-fused disconnect
24 VAC transformer/relay package
Cross-core differential pressure ports

Filters:
Total qty. 2, MERV 8: 20" x 20" x 2"

Unit Weight:
201-272 lbs., varies by option(s)

Max. Shipping Dimensions & Weight (on pallet):
42" L x 30" W x 71" H
325 lbs.
Accessories box shipped loose on top of unit.

Motor(s):
Qty. 2, 0.75 HP ea., Direct drive blower/standard motor packages

Options:
Qty. 2, Variable Speed/ECM - Direct Drive Motors (see HE1XINV EC Motor submittal) - 0.5 HP 120V/1Ph/60HZ, 0.5 HP 208-230V/1Ph/60HZ
Independent blower control
Fused disconnect
Integrated programmable controls - enhanced, premium
Bypass economizer damper (see bypass DIM drawing) - dry-bulb temperature controls (standard), enthalpy controls (option)
Low-leakage motorized isolation dampers - OA, RA or both airstreams
Qty. 2, Factory mounted filter alarms - both airstreams
Double wall construction
Exterior paint - white, custom colors

Accessories:
Filters - MERV 13, 2" (shipped loose)
Backdraft damper - 12"
Automatic balancing damper - 4", 5", 6"
Motorized isolation damper - both airstreams
Hooded wall vent 12" - galvanized, paintable galvanneal
Solid state speed control kit - 115V, 208-230V (1 required per motor)
Digital time clock - wall mount (TC7D-W), in exterior enclosure (TC7D-E)
Carbon dioxide sensor/control - wall mount (CO2-W), duct mount (CO2-D)
IAQ sensor - wall mount (IAQ-W), duct mount (IAQ-D)
Motion occupancy sensor/control - ceiling mount (MC-C), wall mount (MC-W)
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Electric duct heater - RH series (1-11.5 kW); EK series (1–175 kW); designed for indoor ductwork installation only
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AIRFLOW PERFORMANCE

Motor HP Phase	External Static Pressure (Inches Water Column)						
	0.0	0.25	0.5	0.75	0.9	1.25	1.5
0.75 Single Phase	970 CFM 1,490 Watts	925 CFM 1,375 Watts	860 CFM 1,270 Watts	795 CFM 1,160 Watts	750 CFM 1,090 Watts	635 CFM 950 Watts	480 CFM 825 Watts
0.75 Three Phase	970 CFM 1,246 Watts	925 CFM 1,158 Watts	860 CFM 1,039 Watts	795 CFM 928 Watts	750 CFM 856 Watts	635 CFM 691 Watts	480 CFM 509 Watts

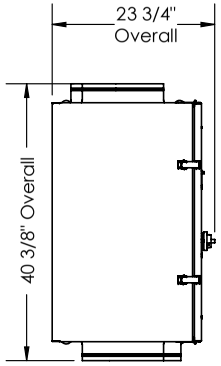
Note: Watts is for the entire unit (2 motors).
Note: Airflow performance includes effect of clean, standard filter supplied with unit.

ELECTRICAL DATA

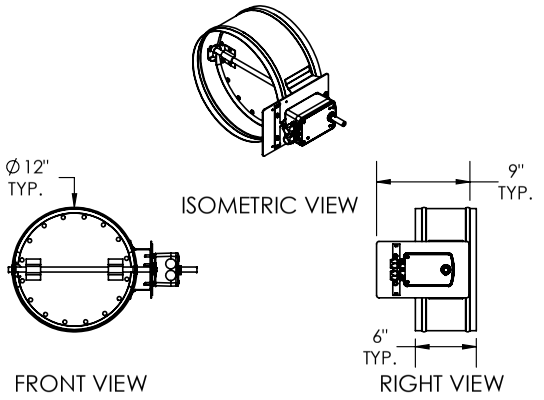
HP	Volts	HZ	Phase	FLA per motor	Min. Cir. Amps	Max. Overcurrent Protection Device
0.75	120	60	Single	9.0	20.3	25
0.75	208-230	60	Single	4.5	10.1	15
0.75	277	60	Single	3.9	8.8	15
0.75	208-230	60	Three	1.7-2.3	5.2	15
0.75	460	60	Three	1.15	2.6	15

Specifications may be subject to change without notice.

RenewAire® Energy Recovery Ventilation



TOP VIEW



(OA/RA) DAMPER OPTION (QTY. 2)
(SHIPPED LOOSE)
SCALE 1:16

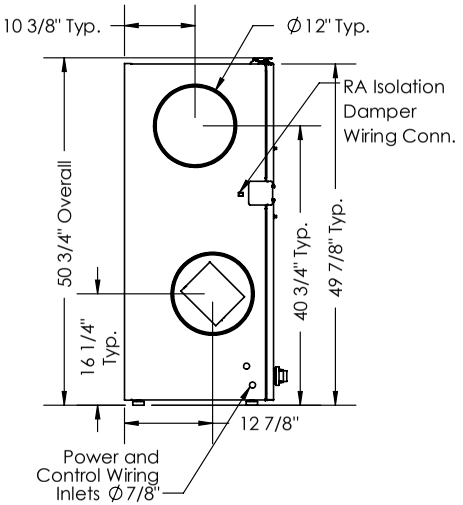
ABBREVIATIONS
EA: Exhaust Air to Outside
OA: Outside Air Intake
RA: Room Air to be Exhausted
FA: Fresh Air to Inside

INSTALLATION ORIENTATION
Unit may be installed in any orientation.

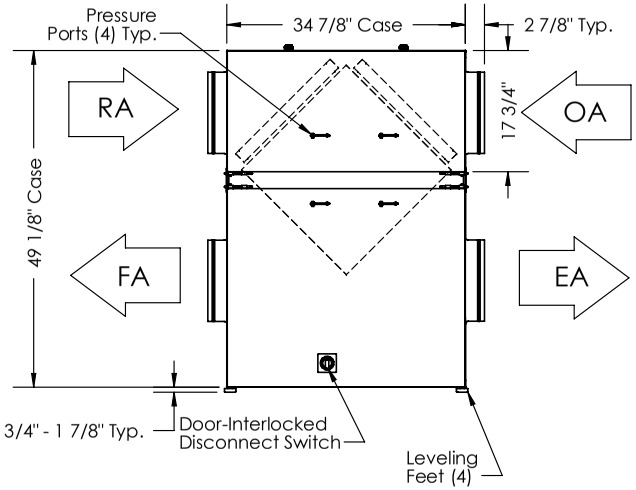
NOTE
1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE ROUNDED TO THE NEAREST EIGHTH OF AN INCH.

2. SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE.

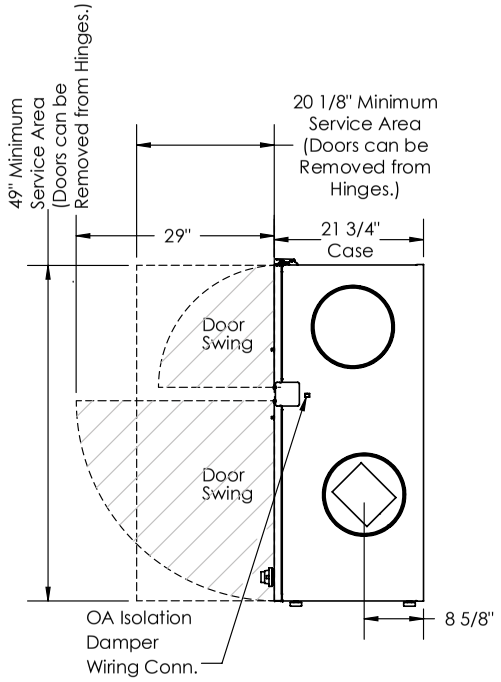
3. DAMPERS SHIPPED LOOSE, FIELD INSTALLATION REQUIRED



LEFT VIEW



FRONT VIEW



RIGHT VIEW

AIRFLOW CONFIGURATION
Available as shown in dimension drawing.

UNIT MOUNTING & APPLICATION
Can be mounted in any orientation. RA/EA airstream can be switched with OA/FA airstream unless certain options are selected.

TABLE OF ILLUSTRATIONS

CONFIGURATION CODE

MODEL NUMBER	H	E	-	1	X	J	I	N		-						-	-						-		
DIGIT NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

Digit 9:	Orientation
"V", "H"	

Digit 11:	Wall Type
"S" = Single "D" = Double	

Digit 12:	Phase
"1" = Single Phase "3" = Three Phase	

Digit 13:	Voltage (see Restriction 1 & 2)
"1" = 115V "4" = 460V "5" = 208-230V "9" = 277V	

Digit 14:	FA Horsepower (see Restriction 3 & 7)
"H" = 0.75 HP Standard Direct-Drive Motors "E" = EC Direct Drive Motors	

Digit 15:	EA Horsepower (see Restriction 3 & 7)
"H" = 0.75 HP Standard Direct-Drive Motors "E" = EC Direct Drive Motors	

Digit 18:	Flow Control*
"-" = No Isolation Dampers (with no Bypass) "D" = Motorized Damper both Airstreams (with no Bypass) "E" = Motorized Damper EA or RA Airstream (with no Bypass) "F" = Motorized Damper FA or OA Airstream (with no Bypass) "0" = Drybulb Bypass Dampers only (no Isolation Dampers) "1" = Drybulb Bypass with Motorized Dampers all Airstreams "4" = Drybulb Bypass with Motorized Damper OA Airstream "5" = Enthalpy Bypass Dampers only (no Isolation Dampers) "6' = Enthalpy Bypass with Motorized Dampers all Airstreams "9" = Enthalpy Bypass witih Motorized Damper OA Airstream	

Digit 19:	Unit Control (see Restriction 4)
"A" = Standard Unit Control Wiring "D" = Independent Blower Control "G" = Terminal Strip for EC Motors	

Digit 20:	Disconnect
"N" = Non-Fused (STANDARD) "F" = Fused	

Digit 21:	Unit Control Enhancements (see Restriction 6)
"T" = Transformer with Isolation Relay (STANDARD) "1" = Enhanced Controls "2" = Premium Controls "3" = Enhanced Controls with BACNET License "4" = Premium Controls with BACNET License	

Digit 22:	Filter Options
"-" = None "F" = Filter Monitor Both Airstreams	

Digit 23:	Other Options
"-" = None (Reserved)	

Digit 24:	Paint and Customization
"-" = None "W" = White Paint "C" = Custom Paint "X" = Custom Unit	

Digit 25:	Safety Listing (see Restriction 5)
"L" = Listed "N" = Non-Listed	

***NOTES:**
Digit 6 "J" = G5 Core Type Digits 10, 16 and 17 are not used in these models.
***Digit 18: Flow Control: Codes for Bypass: Face damper also acts as Isolation damper in EA or RA Airstream.**

Restrictions:
1: Voltage Codes "1" & "9" only available with Phase Code "1" (Single-Phase). 2: Voltage Codes "4" & "8" only available with Phase Code "3" (Three-Phase). 3: Motor Codes "EE" (EC Motors) only available with Phase Code "1" (Single Phase) 4: Unit Control Code "G" (Terminal Strip) only available with Motor Codes "EE" (EC Motors). 5: Some units with Customization Code "X" are not safety listed. 6: Unit Control "A" not available with Unit Control Enhancements Codes "1", "2", "3" & "4". 7: Voltage Code "9" not available with FA/EA Horsepower Codes "EE".

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1.0 OVERVIEW

NOTE: This unit is an Energy Recovery Ventilator, or ERV. It is commonly referred to throughout this manual as an ERV.

1.1 DESCRIPTION

The HE1XIN Energy Recovery Ventilator is a device for recovering both sensible energy (heat) and latent energy (moisture) from the Exhaust Air from an Occupied Space and injecting those energies into an incoming Outside Air stream. It accomplishes this task by forcing the two airstreams through enthalpic cores, where the energy exchange takes place. The two airstreams pass through the enthalpic cores at right angles and the airstreams never mix together. See Section 2.2 Enthalpic Cores in this manual.

Each ERV has two electric blowers, one for each airstream. Fan speeds can be either single speed, or they can have electronically commutated motors. There are a number of different control devices available to control the operation or speed of the unit fans. For further information on available control accessories, see the *HE RenewAire catalog*.

There are two types of HE1X units, one for indoor installations and one for rooftop, or outdoor, installation. This manual is for the HE1XIN, which is the indoor unit. For information on the outdoor version of this product, see the *HE1XRT Installation and Operation Manual*.

These ERVs are commonly installed as part of an air handling system that provides heating and cooling of Supply Air. They can also be installed to operate as stand-alone devices when ducted directly to and from the Occupied Space.

Each HE1XIN unit is available in either a horizontal or a vertical model. The difference between the two models is in the airflow/ducting configuration. Horizontally ducted units are identified by the model name HE1XINH and vertically ducted units are identified as model HE1XINV.

Each unit has an integral 24 VAC power supply that is used internally and can also be used as a power source for other optional control devices.

The HE1XIN units are low-maintenance, requiring periodic replacement of the air filters, and annual vacuuming of the enthalpic cores. See Section 7.0 Unit Maintenance in this manual.

IMPORTANT

It is important to understand and use the equipment airstream terminology as it is used in this manual. The airstreams are defined as:

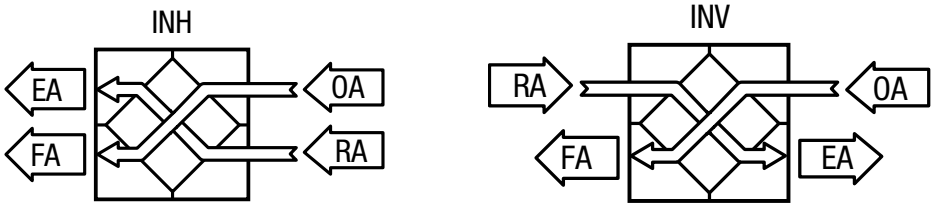
- OUTSIDE AIR (OA): Air taken from the external atmosphere and, therefore, not previously circulated through the system.
- FRESH AIR (FA): Air that is downstream of the enthalpic cores and is ready for conditioning or for return to the Occupied Space.
- RETURN AIR (RA): Air that is returned to the ERV from a conditioned space.
- EXHAUST AIR (EA): Air that is removed from a heating or cooling appliance or from the Occupied Space and discharged.

1.2 AIRFLOW

There are two different airflow options for the HE1XIN. They are:

- HE1XINH
- HE1XINV

The airflow configuration is indicated by digit 9 of the Configuration Code.



MODEL	DESCRIPTION OF DUCT CONNECTION CONFIGURATION
HE1XINH	Room Air [RA] and Outside Air [OA] enter on the same side of the unit.
HE1XINV	Room Air [RA] and Outside Air [OA] enter on oposite sides of the unit.

FIGURE 1.2.0 AIRFLOW ORIENTATIONS

2.0 COMPONENT DESCRIPTIONS

2.1 CABINET

The cabinet for the HE1XIN is made of 20 gauge galvanized steel and has 1" thick high-density, foil-backed insulation on the inside. Units are available in either single-wall or double-wall construction. Doors are hinged and are fitted with stainless steel machine screws through the faces to prevent accidental opening of the doors when the unit is in operation. Doors may be completely removed by releasing the spring loaded hinge pins. All units are equipped with adjustable-height leveling legs for purposes of leveling the unit. Duct flanges are provided at all four airstream openings for connection of field-supplied ductwork.

2.2 ENTHALPIC CORES

All HE1XIN ERVs use a static-plate enthalpic core. The enthalpic cores transfer both latent and sensible energies between the airstreams. Gasketing is pre-installed on the cores and must be positioned to provide a proper air seal. For information on annual maintenance of the cores, see Section 7.0 Maintenance in this manual.

⚠ CAUTION

Low air flow can cause fouling of the enthalpic cores. The ERV must never be operated without clean filters in place and minimum airflow must be greater than 250 CFM per full-sized core.

2.3 FAN/MOTOR ASSEMBLIES

There are two fan and motor assemblies in each ERV.

2.4 E-BOX

Every HE1XIN is equipped with what is known as an “E-Box.” High-voltage supply wiring and low-voltage control wiring is all terminated here. If optional integrated programmable controls are installed, an additional 24 VAC transformer is installed here to power both the controller and its dedicated sensors.

2.5 FILTERS

All HE1XIN units come equipped with two MERV 8 20" x 20" x 2" (nominal) pleated filters. MERV 13 filters can be ordered as an accessory and are shipped loose.

- (2) 20" x 20" x 2" (nominal) pleated filters. Actual size: 19.5" x 19.5" x 1.75"
- Minimum recommended effectiveness: MERV 6.

2.6 FACTORY INSTALLED OPTIONS

All HE1XIN units can be ordered with factory installed options. See Unit Configuration Code on page 7.

Options will have supplemental manuals shipped with the unit.

For EC Motor option, see *EC Motor Supplemental Manual.*

For Commercial Controls, see *Commercial Controls Supplemental Manual.*

For Filter Alarm, see *Filter Alarm Supplemental Manual.*

For Economizer/Bypass, see *Bypass Economizer Supplemental Manual.*

For Isolation Dampers, see *Isolation Dampers Supplemental Manual.*

3.0 SHIPPING/RECEIVING/HANDLING

HE1XIN units are palletized at the factory and then shipped by common carrier. Upon receipt by the installer, the shipment should be inspected for shipping damage, prior to unloading. Any discovered shipping damage should be immediately reported to the RenewAire sales rep and the damage must be recorded on the Bill Of Lading, prior to signing for acceptance of the shipment. The unit can be handled with a fork lift or a crane. Prior to moving the unit, verify that all latches and securing bolts on the cabinet doors are tightly fastened.

If a crane is used for moving the HE1XIN unit, unscrew the sheet metal plates that hold the adjustable legs to the pallet. Use two hoisting slings and a spreader bar to hoist the unit. The hoisting slings must be positioned around the ends of the unit so they do not touch the unit doors. Unit hoisting weights and Center of Gravity are detailed in Sections 3.1 and 3.2 in this manual.

Perform a test lift to make sure the unit is being hoisted level and is secure.

Place the HE1XIN unit on a flat surface where it will be protected from the weather and incidental damage. Do not remove protective coverings from any duct openings and keep the doors secured and tightly closed.

3.1 UNIT WEIGHTS AND DIMENSIONS

3.1.1 Unit Dimensions and Weight:

HE1XINH: 54 3/4" L x 23 3/4" W x 35 5/8" H
204-275 lbs., varies by option(s)

HE1XINV: 40 3/8" L x 23 3/4" W x 50 3/4" H
201-272 lbs., varies by option(s)

3.1.2 Maximum Shipping Dimensions and Weight:

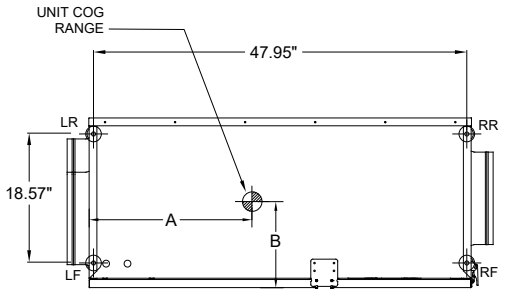
HE1XINH: 63" L x 30" W x 56" H
325 lbs.

HE1XINV: 30" L x 42" W x 71" H
325 lbs.

3.2 RIGGING AND CENTER OF GRAVITY

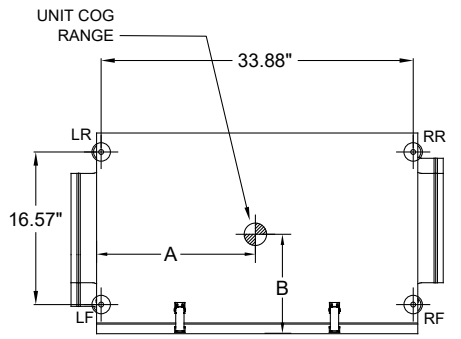
3.2.1 HE1XIN Hoisting Weights and COG

There are pairs of rigging holes at each lower corner of the unit. Use slings or shackles at all four corners. Spreader bars are recommended in order to avoid damage to the unit.



BASIC UNIT WEIGHTS (lbs.)					
Motors	UNIT	LF	LR	RR	RF
.75 HP 1-PHASE	218	58	63	51	46
.75 HP 3-PHASE	229	61	66	56	48
ADDITIONAL WEIGHTS FOR OPTIONS (lbs.)					
Options	UNIT	LF	LR	RR	RF
Double Wall	65	15	15	19	16
By-Pass	1	0.5	0.5	0.0	0.0
RA or EA Damper	11	1	1	4.5	4.5
OA or FA Damper	11	2	3	2	3
Total Selected Weights					
INDICATES LOCATIONS AT WHICH CORNER WEIGHTS ARE CALCULATED: LEGS.INDICATES LOCATIONS AT WHICH CORNER WEIGHTS ARE CALCULATED: LEGS.					
Center of gravity: From Left A = 18", From Front B = 12" (+/- 2")					

FIGURE 3.2.0 HE1XINH WEIGHTS AND COG



BASIC UNIT WEIGHTS (lbs.)					
Motors	UNIT	LF	LR	RR	RF
.75 HP 1-PHASE	201	57	46	44	54
.75 HP 3-PHASE	212	55	51	51	55
ADDITIONAL WEIGHTS FOR OPTIONS (lbs.)					
Options	UNIT	LF	LR	RR	RF
Double Wall	67	17	16	17	17
By-Pass	1	0	0	0.5	0.5
RA or EA Damper	11	3	2	3	2
OA or FA Damper	11	2	3	2	3
Total Selected Weights					
⌖ INDICATES LOCATIONS AT WHICH CORNER WEIGHTS ARE CALCULATED: LEGS.INDICATES LOCATIONS AT WHICH CORNER WEIGHTS ARE CALCULATED: LEGS.					
⌖ Center of gravity: From Left A = 18", From Front B = 12" (+/- 2")					

FIGURE 3.2.1 HE1XINV WEIGHTS AND COG

3.3 RECEIVING

Upon receipt of the HE1XIN, inspect the unit for obvious external damage. If damage is observed, take digital pictures and report the damage to your RenewAire representative. Note the damage on the carrier's Bill of Lading. Depending on expected transport and storage conditions, the unit may have only the duct openings covered, it may be stretch-wrapped or it may be crated. Do not unwrap the unit at this time. The unit will normally be moved to its final location while still wrapped and attached to its pallet.

The preferred method of hoisting the HE1XIN from the carrier truck is by using a construction forklift.

Once the unit is unwrapped, prevent dirt and debris from entering the cabinet by covering any duct openings that do not have attached dampers. Keep the duct openings covered until it is time to connect ductwork.

3.4 STORAGE

Units that must be stored prior to installation should be left on their pallets and protected from weather and physical damage. Units must be placed on a level surface to prevent wracking of the pallet and the HE1XIN. All access doors must be secured with all available hardware (door latches and securing bolts) and all openings into the cabinet must be sealed to prevent entry of dust, dirt and debris.

4.0 UNIT PLACEMENT

4.1 BEFORE YOU BEGIN

The HE1XIN is designed for installation in a sheltered location, out of the weather. The preferred mounting location is to place the unit on a concrete floor, although it can also be suspended from a ceiling or other structural support. See Section 5.3, Suspended Mount, in this manual.

For all installations, maintain needed service clearances as shown on the dimensioned drawings located in Section 4.2 of this manual. In addition, if the optional Bypass Economizer is ordered, additional clearance will be required for the extra bypass duct. See the RenewAire Supplemental Manual for ByPass or further information and clearance details specific to the HE1XIN units.

For all floor-mount installations, the unit should be set on its factory-provided adjustable legs and leveled. Select a location that is central to the inside duct runs and close to both the exhaust duct (to the outside) and also to the fresh air duct (from the outside).

The exhaust outlet and the outside air inlet on the outside of the building should be at least 10' apart to avoid cross-contamination. Comply with all local building codes in the positioning of the duct openings. Do not position the exhaust air outlet in a location where it will dump exhaust air into any enclosed or occupied space. The duct inlets and outlets should be screened against insects and vermin and should be shielded from the weather to prevent entry of rain or snow.

4.2 SERVICE CLEARANCES

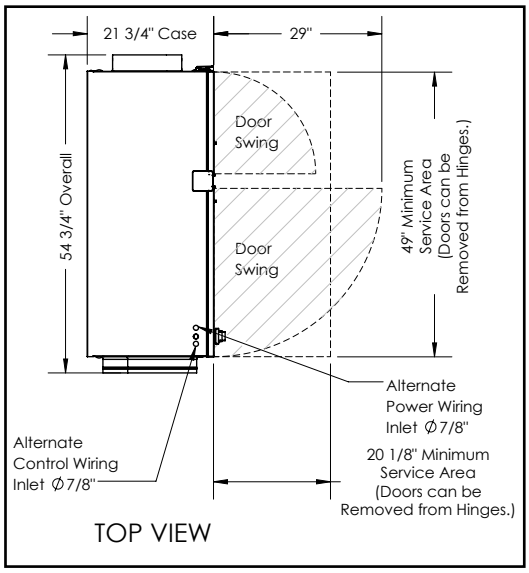


FIGURE 4.2.0 SERVICE CLEARANCES, HE1XINH

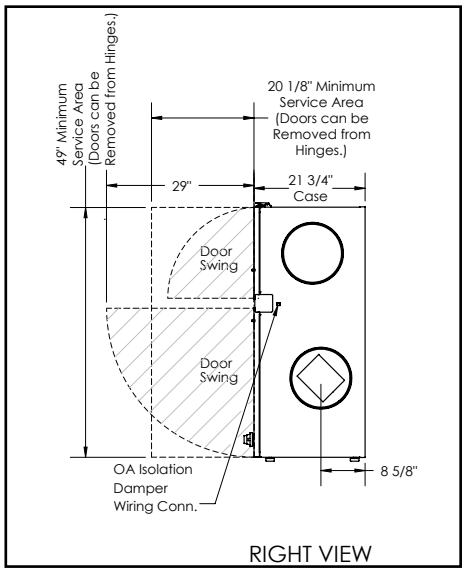


FIGURE 4.2.1 SERVICE CLEARANCES, HE1XINV

4.3 SOUND ATTENUATION

Take these simple steps to attenuate noise from the unit.

4.3.1 Outside the Building

Exhaust velocity noise is the primary cause of unit-related noise outside the building. Size the exhaust duct and grille for less than 1000 feet per minute (FPM) air velocity. When practical, orient the exhaust air hood to point away from houses or public areas.

4.3.2 Ducts

Make sure the ductwork at the unit outlets is stiff enough to resist the flexure and resulting booming associated with system start up and shut-off, as well as the turbulent flow conditions at the blower outlets.

In general, provide smooth transitions from the ERV's outlets to the duct. The ducts connecting to the outlets should be straight for a sufficient distance, with gradual transitions to the final duct size.

These guidelines are consistent with SMACNA recommended duct layout practices for efficient and quiet air movement. Follow SMACNA guidelines.

4.3.3 Radiated Noise

The HE1XIN is insulated with high-density fiberglass. This provides significant attenuation of radiated sound.

The outlet ducts can be significant sources of radiated sound as well. The FA and EA ducts (outlet ducts) should be insulated for sound control. This insulation should start at the unit. At a minimum the first 10' of duct should be insulated. All parts of the FA and EA ducts located in the mechanical space should be insulated for sound control, both to minimize sound radiation out of these ducts and also to control sound radiation into the ducts.

4.3.4 Aerodynamic (Velocity) Noise

When sound attenuation is a design concern, the primary consideration is velocity noise at the unit's Fresh Air blower outlet.The average velocity at the blower outlets is 2482 FPM when the unit is operating at 750 CFM.

5.0 INSTALLATION

5.1 DUCTWORK

5.1.1 Ducts to the Outside

The exhaust outlet and fresh air inlet on the outside of the building should be at least 10' apart to avoid cross-contamination. The exhaust outlet should not dump air into an enclosed space or any other structure. The inlets and outlets should be screened against insects and vermin and shielded from the weather to prevent the entry of rain or snow.

Ducts connecting the HE1XIN to the outside must be insulated, with sealed vapor barrier on both inside and outside of the insulation. Insulate both the Outside Air (OA) and Exhaust Air (EA) ducts.

5.1.2 Inside Ductwork System

Ensure Good Ductwork Design
Ductwork should be designed to allow the unit to provide the required airflow and reduce pressure drop for efficient, quiet operation. If the inside ducts run through unconditioned spaces they must be insulated with a sealed vapor barrier on both inside and outside of insulation.

Use Non-motorized Dampers to Set and Balance Air.
In most applications, the airflow rate for both the Fresh Air and the Exhaust Air should be roughly equal (or "balanced") for best performance of the HE1X Unit. See unit specification sheet for CFM/ESP curves.

5.2 FLOOR INSTALLATION

Most units are installed in a location specified by others. In general, it's preferable to install the unit on a flat, reasonably level surface, such as a concrete floor. The factory-installed leveling legs are to be used to level the unit before connecting ductwork. When positioning the unit, it is not to be slid on its adjustable legs because they can be bent.

NOTE: Ducts inside a building that are connected to the outside must be insulated with a sealed vapor barrier on both the inside and the outside of the insulation.

NOTE: To prevent the entry of rain through the outside air inlet duct, observe the following:

1. Velocity at face of inlet hood should not exceed 500 FPM.
2. Inlet duct must be at least 12" inside diameter.
3. Centerline length along duct from weather hood to unit inlet must be at least 48".
4. Inlet duct must pitch downward to the outside; centerline of inlet hood must be at least 18" below the centerline of the unit inlet.
5. Outlet duct must pitch downward to the outside with a slope of at least ¼" to the foot.

⚠ CAUTION

The HE1XIN weighs 210 lbs. It is the installer's responsibility to make sure that the screws or bolts used for securing the units are properly selected for the loads and substrates involved.

5.3 SUSPENDED MOUNT

HE1XIN units can also be suspended from a ceiling or other structural member. The preferred method of support is to remove the four adjustable legs and bolt heavy-gauge Unistrut or other structural channels to the underside of the unit, using the 3/8-16" threaded holes where the adjustable legs were located. Install 3/8-16" bolts through the channels, into the bottom of the unit. Support the channels from threaded rods, located in an appropriate location that maintains required service clearances

5.4 ELECTRICAL REQUIREMENTS

5.4.1 Electronically Commutated Motors

These ERVs may be ordered with factory-installed features including Electronically Commutated (EC) Motors. Consult the *EC Motor Supplemental Manual* for more information.

Electrical Options are identified on the Unit Label located near electrical box on the outside of the unit. Find the complete Unit Model Number in the lower left corner of the Unit Label. Use the configuration chart to determine motor power and voltage installed in your HE1XIN.

NOTE: That leveling legs supplied with HE1XIN can be removed and replaced with 3/8-16" bolts to secure unit to mounting brackets, if desired.

Use conduit, strain reliefs, etc. as required by code to secure the field wiring. Electrical knockouts are provided for alternate line voltage and voltage control locations for field wiring to the internal electrical box. If the alternate sites are desired for field wiring then carefully remove the knockout plugs and foam insulating plugs from the alternate sites and install them in the open knockout locations.

5.4.2 Low Voltage Control System

⚠ CAUTION

Before bringing power to the unit check unit nameplate to confirm it matches the voltage and phase of the power you are supplying. Remember that your field connections need to be accessible for inspection.

This ERV is provided with a Class II 24 VAC power supply system that operates the unit's contactor(s) for HE1XIN. The ERV's 24 VAC Power Supply can also be used to power the externally-installed controls system: up to 8 VA of power is available.

The unit's power supply system includes isolation relay(s) so you can use external controls whose contact ratings are as low as 50 mA (1.2 VA). Also, it is possible to operate the isolation relays with 24 VAC power from an external source (with proper wiring connections).

A built-in circuit-breaker prevents damage to the transformer and other low-voltage components in the event of a short-circuit or overload. In extreme cases, the transformer itself is designed to fail safely.

Specifications:

- Nominal Output Voltage under load: 24 VAC
- Typical Output Voltage at no load: 29–31 V
- Minimum contact rating for connected control device: 50 mA (1.2 VA)
- Circuit Breaker Trip Point: 3 A

NOTE: Standard HE1XIN with single phase original equipment motors are suitable for use with solid state speed control.

NOTE: Le HE1X-IN avec moteurs d'équipement d'origine monophasés sont adaptés pour une utilisation avec regulateur de vitesse electronique.

⚠ CAUTION

1. Connect only to components intended for use with 24 VAC power.
2. Do not undersize the low-voltage wires connected to this device. Observe the wire length and gauge limits indicated in this manual.
3. Do not overload this unit's 24 VAC power supply system. Confirm that the power requirements of devices you connect to this power supply system do not exceed 8 VA in total.
4. If an external source of 24 VAC power is used to control the unit, consult the wiring schematics and connect the external power only to the specified terminals in order to avoid damaging the unit or external controls. Connect only CLASS II power to the control terminals of this unit.
5. Unit is not equipped to receive analog signals (such as 1–10 vdc or 4–20 mA).

5.4.3 How to Reset the 24 VAC Circuit Breaker

If the transformer is subjected to an excessive load or a short circuit, the circuit breaker will trip to prevent the failure of the transformer. When it trips the circuit breaker's button pops up. Shut off the primary-side power to the unit, and remove the excessive load or the short. The circuit breaker can be reset about fifteen seconds after it trips by pressing in the button.

NOTICE

If primary-side voltage is 230 VAC, move black primary-side lead from transformer's "208 V" terminal to the transformer's terminal marked "240 V" ("230 V" in some units). Do not move the black primary-side lead that is connected to the transformer's "COM" terminal.

5.4.4 Limits of Power Output

If limits on wire gauge and length are observed, you may connect control devices that draw up to 8 VA to the blue and red wires. More than one device can be connected as long as total steady-state load does not exceed 8 VA.

Wire Gauge	#22	#20	#18	#16	#14	#12
Circuit Length	100'	150'	250'	400'	700'	1000'

"Circuit Length" is distance from ERV to Control Device.

Observe these limits to wire length and gauge in order to ensure reliable operation of the control system.

⚠ CAUTION

Be careful if the external control system provides 24 VAC power at its control output: make sure blue and red leads are separately capped and not connected to any other wires.

5.5 WIRING SCHEMATICS

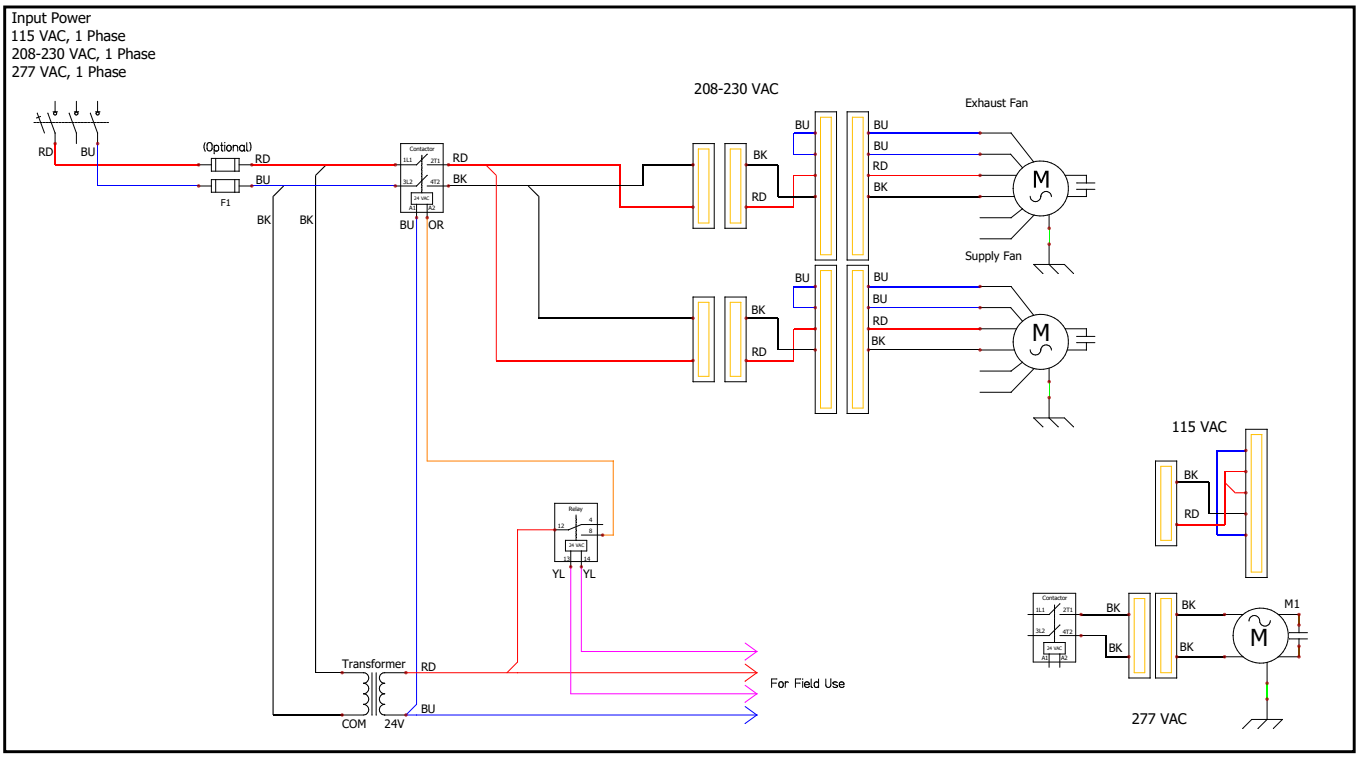


FIGURE 5.5.0 HE1XIN SINGLE PHASE UNIT, STANDARD

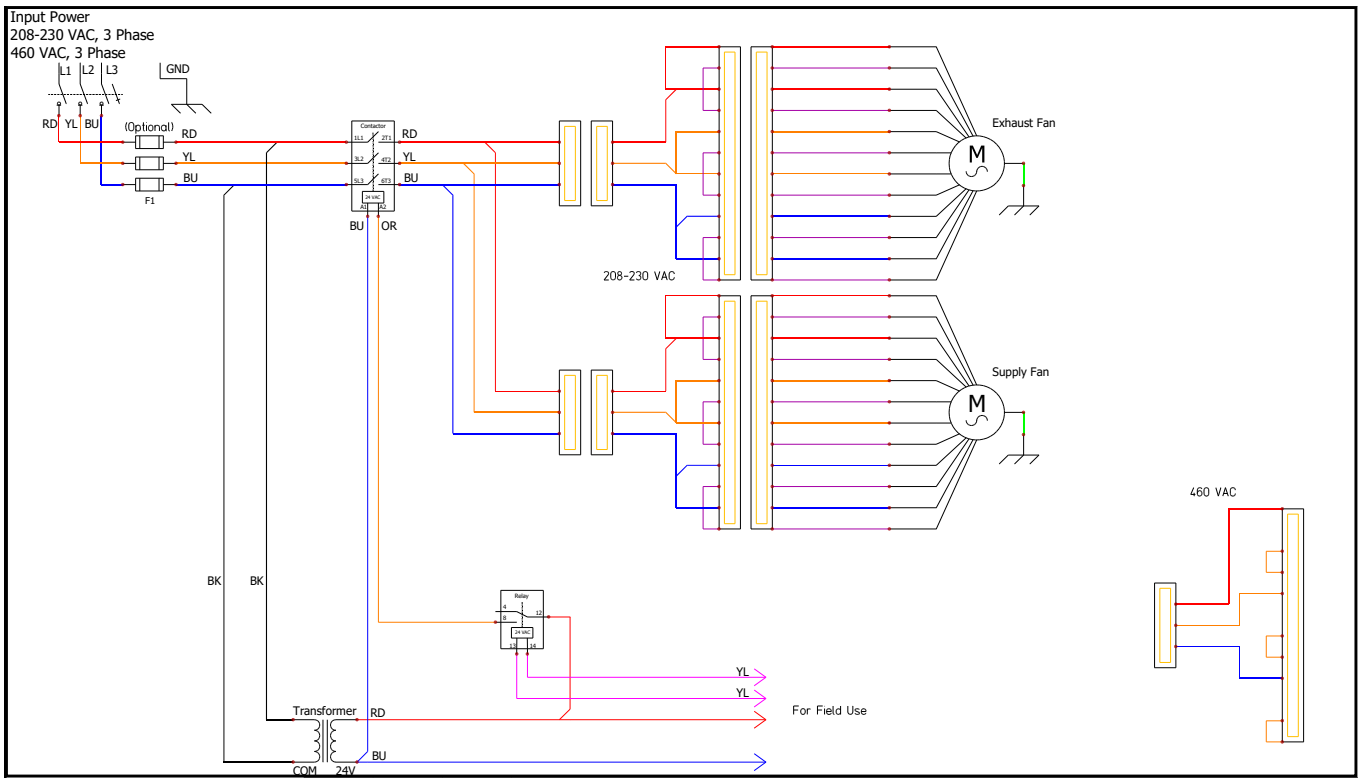


FIGURE 5.5.1 HE1XIN THREE PHASE UNIT, STANDARD

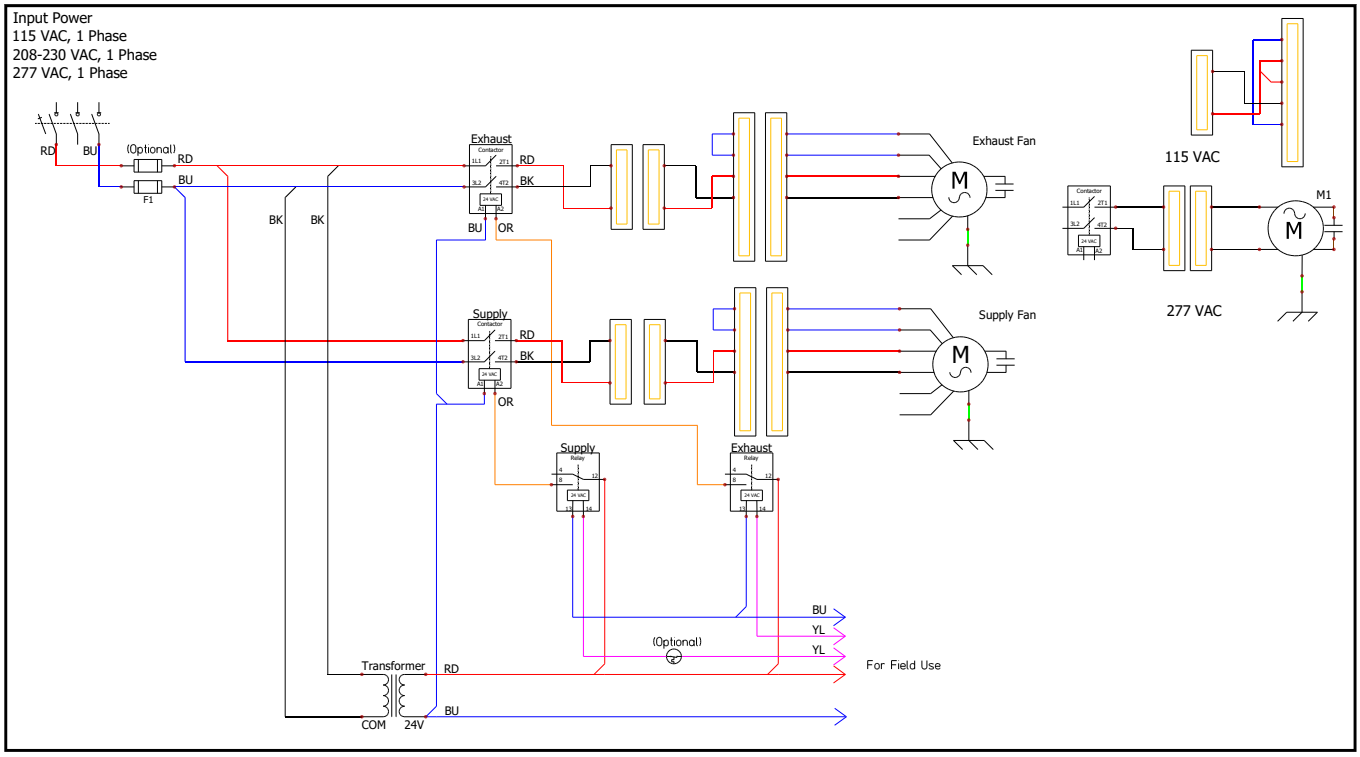


FIGURE 5.5.2 HE1XIN SINGLE PHASE UNIT, INDEPENDENT BLOWER CONTROL

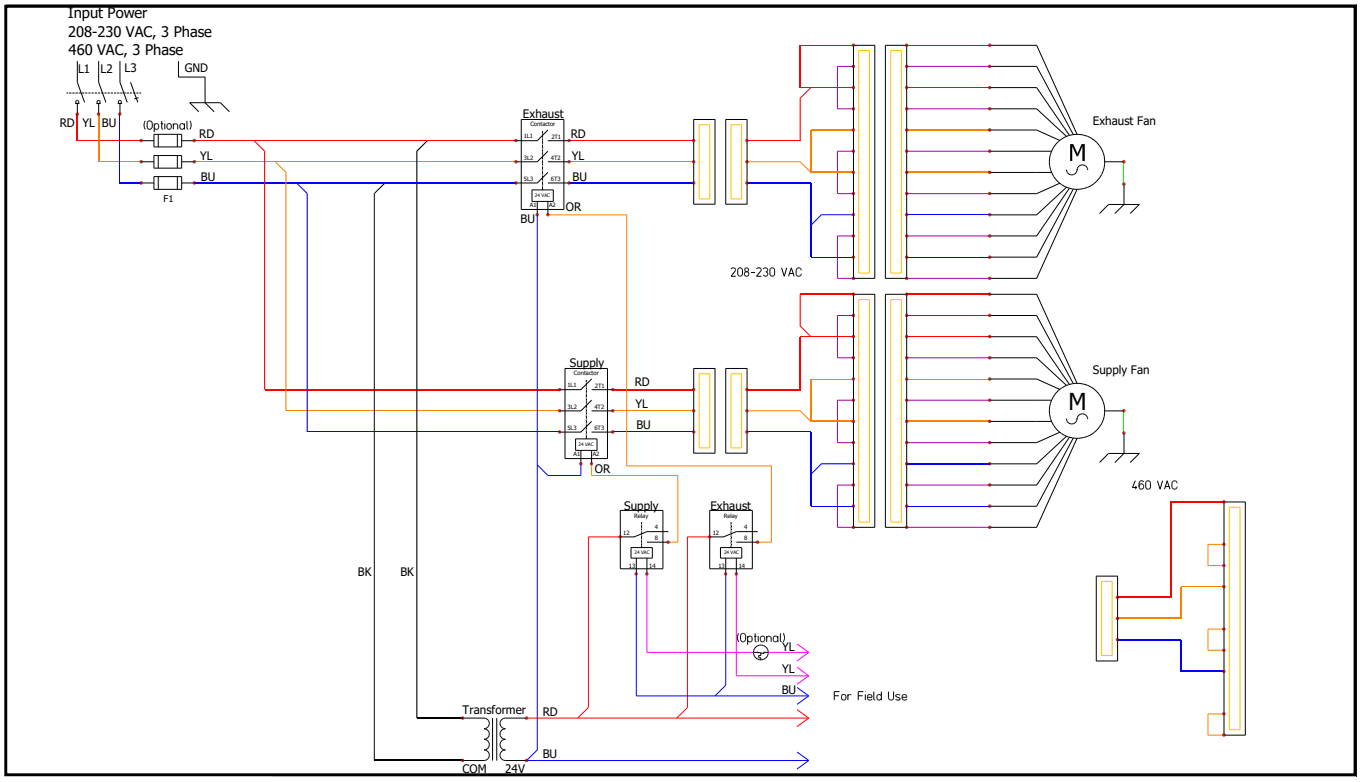


FIGURE 5.5.3 HE1XIN THREE PHASE UNIT, INDEPENDENT BLOWER CONTROL

NOTE: The simplified schematics below show only the relevant portions of the low-voltage control circuit in the ERV unit and representational external control approaches. See the complete unit schematics above.

⚠ CAUTION

Make sure the control provides no voltage or current at its output terminals.

5.6 EXTERNAL CONTROL CONNECTIONS

5.6.1 Single 2-Wire Control, Unpowered

Use the schematic shown in Figure 5.6.0; if the control requires no power to operate and acts like a simple on/off switch. The control must not supply any power to the ERV unit.

- Connect the blue lead to one yellow lead.
- Connect the control's contacts to the red lead and the remaining yellow lead.

Control on separate Power Supply, no power present at Control Output:

- Wire as shown for the Single 2-wire control.

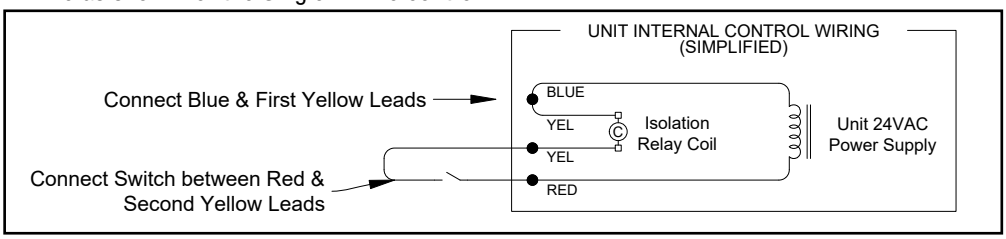


FIGURE 5.6.0 A SWITCH OR NON-POWERED CONTROL USING UNIT'S 24 VAC POWER SUPPLY

5.6.2 Control Sending 24 VAC "ON" Signal

Use the schematic shown in Figure 5.6.1 if a 24 VAC "ON" signal is to be sent from an external power source to the ERV.

- Make sure the blue and red leads are separately capped and not connected to any other wires.

Now you safely can apply 24 VAC to the two yellow leads to operate the ERV's isolation relay.

⚠ CAUTION

Supply only 24 VAC (not VDC) from a Class II Power Source.

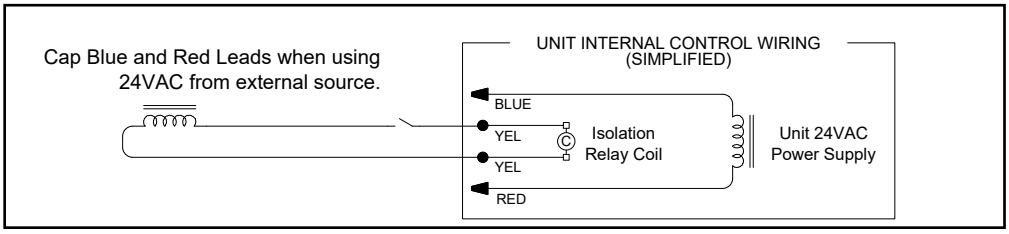


FIGURE 5.6.1 24 VAC FROM AN EXTERNAL SOURCE

5.6.3 Control Operating on Unit's 24 VAC Power Supply

Use the schematic shown in Figure 5.6.2 if controls are operating on unit's 24 VAC power supply.

- 24 VAC power is available at the blue and red leads.
- Connect one of the yellow leads to the blue lead.
- Connect the switched output of the Control to the red lead to operate the ERV's isolation relay.

⚠ CAUTION

External control system should not draw more than 8 VA.

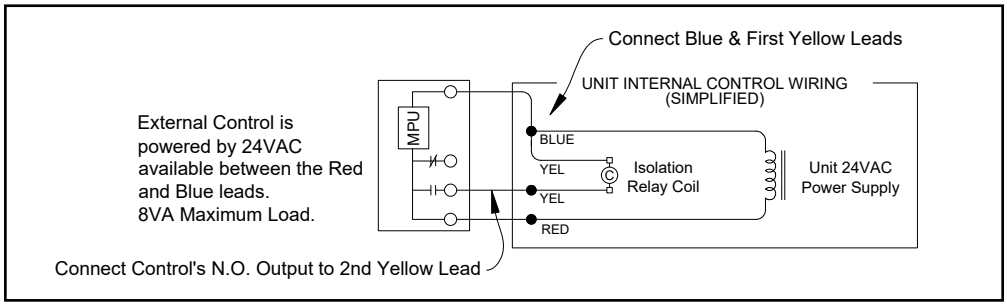


FIGURE 5.6.2 AN EXTERNAL CONTROL DEVICE USING UNIT'S 24 VAC POWER SUPPLY

5.6.4 Control System with two Non-Powered Relay Contacts:

ERVs with Independent Blower Control Only:

Use Figure 5.6.3 if the external control system provides no voltage or current at its output contacts.

- Connect the two blue leads together.
- Connect the red lead to one side of each of the output contacts.
- Connect the other side of the output contacts to the appropriate yellow leads (marked “FA Blower” and “EA Blower”).

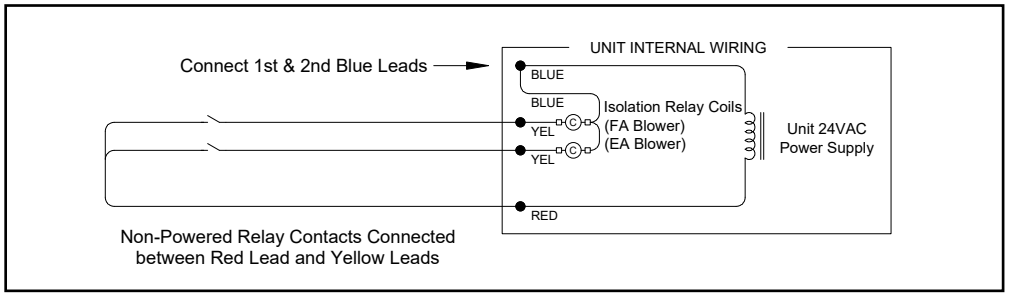


FIGURE 5.6.3 TWO EXTERNAL NON-POWERED RELAY CONTACTS

5.6.5 Control System Sending two 24 VAC “On” Signals (from an external power source)

Use Figure 5.6.4 only if the ERVs has Independent Blower Control:

- Make sure the blue and red leads are separately capped and not connected to any other wires.

Now you safely can apply one of the 24 VAC signals to the one of the yellow leads (marked “FA Blower” and “EA Blower”) and the blue lead to operate one of the ERV’s isolation relay.

- Supply the second 24 VAC signal to the other yellow lead and again to the blue lead (make sure the polarity of each wire connected to the blue lead is the same).

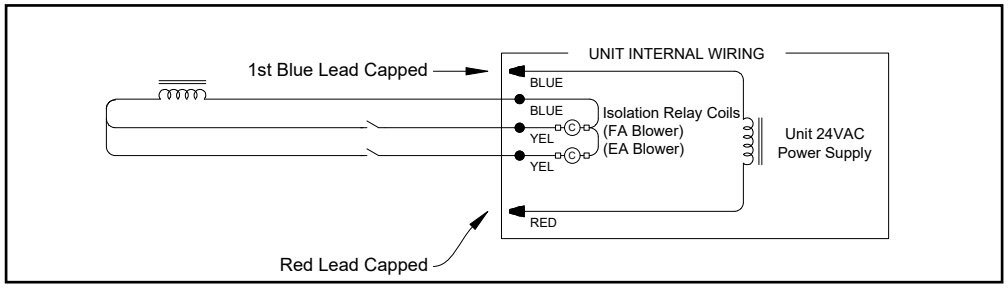


FIGURE 5.6.4 TWO EXTERNAL RELAY CONTACTS SUPPLYING 24 VAC FROM AN EXTERNAL SOURCE

5.6.6 Control System Operating Isolation Dampers with End Switches

Use Isolation Dampers with electrically separate end switches. The end switches are used to separately control the ERV unit’s Isolation Relays. Also, specify the ERV with Independent Blower Control. This ensures that each damper is open before the respective blower starts up.

5.7 QUICK-START FOR TESTING CORRECT 3PH WIRING

All units that run on 3 phase power should be test-run immediately after high voltage wiring connections are made. This will verify that the three phases are properly connected, that the dampers will open and close properly and the fans are working properly.

For purposes of testing correct phase connections, the internal 24 VAC power supply will be used to power-up the fans and all external control devices will be disabled, when applicable.

⚠ CAUTION

Supply only 24 VAC (not VDC) from a Class II Power Source.

NOTE: Because the ERV’s contactors will only be operating once the Dampers are open, the power draw of the Damper Actuators is allowed to be as much as 35 VA while opening (including power draw of the external control system, if any). However the power draw of the fully-opened (stalled) Actuators (and external control system if any) must be less than 8 VA.

NOTE: Any changes to unit low-voltage wiring should be made with the disconnect switch in the OFF position.

6.0 OPERATION

6.1 PRINCIPLE OF OPERATION

The HE1XIN has one basic purpose: to exhaust air from a structure and bring in fresh air from outside, while transferring heating or cooling energy from the exhaust air to the fresh air.

The HE1XIN is a very simple device, and will accomplish this purpose as long as the blower is able to move air through the enthalpic core.

6.2 PRE-START UP

6.2.1 Verify Voltages

Using a voltmeter, test the input voltages as supplied to the disconnect switch. Refer to Digit 13 of the unit Configuration Code to find the rated voltage. The supplied voltage must be within +/- 10% of the rated voltage.

6.2.2 Verify Transformer Wiring

Units with 230 VAC power source are shipped with the transformer wired for 208 VAC. If the unit is receiving 230 VAC, make sure the black primary-side wire on the transformer's 208 V terminal has been moved to the 230 V terminal.

6.2.3 Inspect Filters

Clean filters must be installed prior to fan start up.

6.2.4 Inspect Foam Gasketing

Inspect the gasketing to make sure there are no gaps allowing air movement around the cores or filters.

6.2.5 Inspect Fans

Prior to start up, the fans should be rotated by hand to make sure that the impeller is not rubbing anywhere and that they turn freely.

6.2.6 Inspect and Clean the Cabinet Interior

During the construction and installation phases of a project, dust, dirt and debris will often accumulate inside a unit. Thoroughly clean the inside of the unit by vacuuming and/or wiping metal surfaces with a damp rag.

6.2.7 Inspect Ductwork Connections

Ducts attached to the ERV must be firmly attached, sealed and supported in accordance with installation instructions and SMACNA guidelines.

6.3 UNIT START UP

6.3.1 Fixed-Speed Units

Most fixed-speed units do not have any external controlling signals and only require turning on the disconnect switch, located on the door. When the disconnect switch is turned ON, any dampers will first move into their correct operating positions and then power is suppled to the motor contactors, causing the fans to run.

Some fixed-speed units are wired to receive an actuating signal from an external source. If there is an external actuating signal source, verify the type of signal and that it is wired according to the low-voltage wiring diagrams found in Section 5.6 of this manual. Turn on the disconnect switch and then turn ON the actuating device. After any dampers have moved into their correct positions, power is then applied to the motor contactors and the fans will begin running.

IMPORTANT

It is important to balance the airflows after the unit is operational and all ductwork has been installed. Balancing the airflows is typically required by state and/or local codes, and is often specified by the HVAC design engineer.

Optimum efficiency of the enthalpic cores is achieved when the airstreams are properly balanced.

6.4 BALANCING AIRFLOW

Equipment Required:

- A magnehelic gauge or other device capable of measuring 0–1.0 in. water of differential pressure.
- 2 pieces of natural rubber latex tubing, 1/8" ID, 1/16" Wall works the best.

The individual differential static pressures (DP) are measured using the installed pressure ports located in the front of the units core access doors.

Do not relocate pressure ports.

Procedure:

- To read SCFM of Fresh Air (FA) install the “high” pressure side (+) of your measuring device to the Outside Air (OA) port and the “low” pressure side (-) to the Fresh Air (FA) port.
- To read SCFM of Room Air (RA) install the “high” pressure side (+) of your measuring device to the Room Air (RA) port and the “low” pressure side (-) to the Exhaust Air (EA) port.
- Use the reading displayed on your measurement device to cross reference the CFM output using the conversion chart.

NOTE: ERV airflows are to be balanced after all ductwork is installed. Balancing of airflows is typically required by local or state building codes or by the HVAC design engineer.

NOTE: The tubing should extend in the pressure port approx. 1".

NOTE: These ports are carefully located on the unit to give the most accurate airflow measurement. Do not relocate pressure ports.

NOTE: Make sure clean filters are installed before balancing airflow. Dirty or clogged filters reduce airflow through the unit.

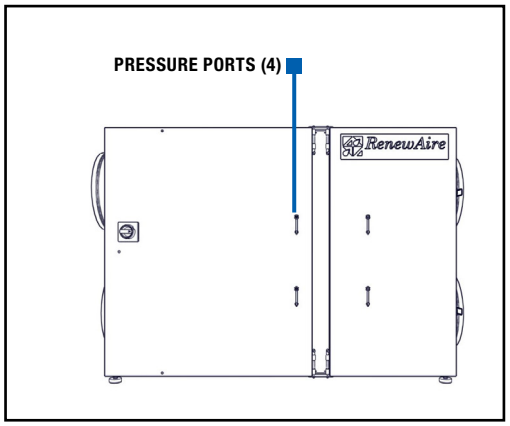


FIGURE 6.4.0 HE1XINH PRESSURE PORT LOCATIONS

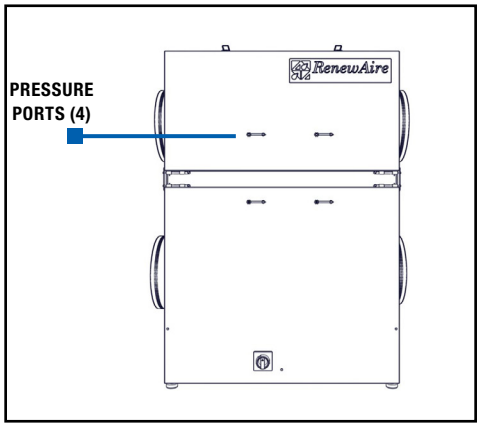


FIGURE 6.4.1 HE1XINV PRESSURE PORT LOCATIONS

DIFFERENTIAL STATIC ACROSS CORE DSP VS. CFM												
HE1XINV	DP (H_2O)	DSP	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1
	Fresh Air (FA)	CFM	280	380	470	570	670	770	860	960	1060	1160
	Room Air (RA)	CFM	220	320	430	530	630	730	840	940	1040	1140
HE1XINH	DP (H_2O)	DSP	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1
	Fresh Air (FA)	CFM	260	360	470	570	670	770	870	970	1070	1180
	Room Air (RA)	CFM	240	340	440	540	640	740	840	940	1040	1140

6.4.1 Filter Pressure Drop

NOTE: Clean filter pressure drop is included in unit airflow performance tables.

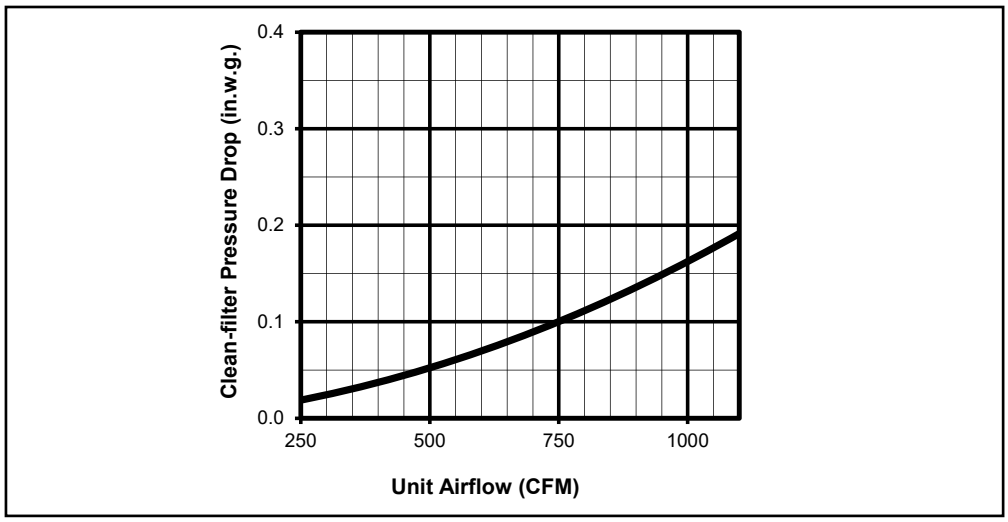


FIGURE 6.4.2 INITIAL PRESSURE DROP OF MERV 8 FILTERS, SUPPLIED WITH THIS UNIT

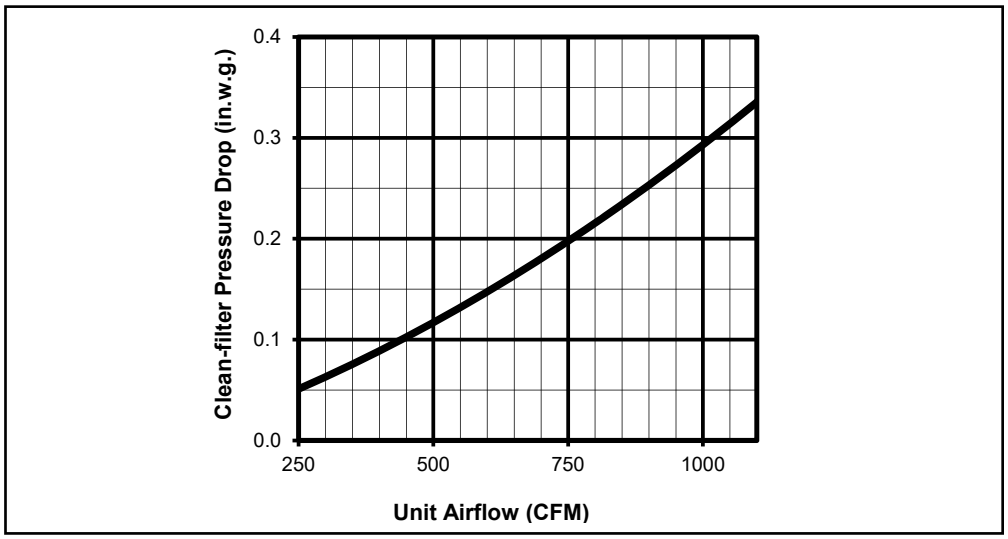


FIGURE 6.4.3 INITIAL PRESSURE DROP OF MERV 13 FILTERS, AVAILABLE AS AN ACCESSORY

6.5 NORMAL OPERATION

A wide variety of control schemes may be selected by the engineer, installer, or owner to meet the ventilation needs of the facility. These may include timer clocks, occupancy sensors, dehumidistats (for cool-weather operation), carbon dioxide sensors, and others. DDC systems may also control the unit. Most control schemes will operate the unit only when needed.

Continuous operation is acceptable in virtually all conditions. Unit will not be damaged by continuous operation as long as air flow occurs. Blower motors may overheat if filters become completely blocked due to lack of maintenance. Motors are thermally protected. With continuous operation, some external frosting may occur in very cold weather (see Section 6.6).

6.6 EXTREME COLD OPERATION

HE1XIN units are capable of operating without internal frosting at temperatures down to -10°F, with indoor humidity below 40%. The units can operate under more severe conditions occasionally with little or no impact on their performance. At lower humidities, they can operate at still lower outside temperatures without freezing the enthalpic cores.

Some condensation or even frost may form on the outside of the unit or drip off the cabinet during very cold conditions, especially if the unit runs continuously. Exterior condensation during extreme cold conditions can be reduced or prevented by periodically cycling the unit OFF for several minutes to allow the cabinet to warm up.

7.0 MAINTENANCE

RenewAire ERVs are built to operate with minimal maintenance. After unit commissioning, the primary areas of attention are the air filters and annual vacuuming of the enthalpic cores.

⚠ WARNING

Danger of injury if unit starts unexpectedly. Switch power off at service disconnect. Lock-out/tag-out the disconnect.

⚠ WARNING

Danger of Electrical Shock when servicing an installed unit.

ALWAYS DISCONNECT POWER SOURCE BEFORE SERVICING! More than one disconnect switch may be required.

Proper Wiring Size Selection and Wiring Installation are the Responsibility of the Electrical Contractor.

7.1 MAINTENANCE 24 HRS. AFTER START UP

24 hours after unit start up:

- In new installations, check the air filters since they will often collect dust, dirt and debris at time of start up.

7.2 MAINTENANCE 30 DAYS AFTER START UP

After 30 days of operation:

- Tighten all electrical connections.
- Check the air filters as part of the normal monthly maintenance.

7.3 MAINTENANCE SCHEDULE

Experience on the part of the service person is the most important issue in establishing a maintenance schedule. There will be times of the year when frequent inspection of the filters will be required, such as spring and summer when there may be pollen, dust, dirt or debris from budding trees and bushes that can clog the filters. Also see Section 7.7 Maintenance Records in this manual.

7.4 FILTERS

Inspection and replacement of air filters is the most frequent maintenance issue. For units that do not have filter air pressure differential sensors, filters must be visually inspected monthly, as a minimum. If a filter looks discolored or dirty, REPLACE IT! When installing new filters, DO NOT USE filter sprays. Residue from the filter spray could migrate to the enthalpic core media and damage the cores.

For units that have filter air pressure differential sensors, a dirty filter alarm will occur on the connected alarm or control device.

Filter cleanliness and replacement is the most important and frequent maintenance issue. Dirty filters will cause an immediate reduction in operating efficiency of the ERV. Normally, filters should be inspected and changed when they are dirty. Paper filters are not to be cleaned, they are to be replaced.

In general, if a filter looks dirty, replace it. The best indication of dirty filters is to check the pressure drop across the filter banks with an optional filter monitor. If it is not possible to check the pressure drop, the rule of thumb would be to change the filters every two months.

7.5 FAN MOTORS

The motor needs no lubrication. If necessary vacuum clean the blower wheels at the same time you clean the face of the enthalpic core (annually).

7.6 ENTHALPIC CORE

⚠ CAUTION

DO NOT WASH THE ENTHALPIC CORE.

Keep it away from water or fire to avoid damaging it. Always handle the core carefully.

⚠ CAUTION

RISK OF DAMAGE TO ENTHALPIC CORES

Whenever working within the ERV cabinet, protect the enthalpic cores from accidental damage. The core media is subject to damage from dropped tools or other foreign objects

7.6.1 Enthalpic Core Maintenance

The enthalpic core media is a fibrous material that must be kept clean at all times. As a minimum, cores should be cleaned once per year.

- DO NOT WASH OR ALLOW THE ENTHALPIC CORES TO GET WET.
- DO NOT EXPOSE THE ENTHALPIC CORES TO HIGH HEAT OR FLAMES.
- DO NOT DIRECT COMPRESSED AIR AT THE CORE MEDIA.
- DO NOT REMOVE THE ENTHALPIC CORES FROM THE ERV UNLESS NECESSARY.
- USE CAUTION WHEN WORKING AROUND THE ENTHALPIC CORES. DO NOT DROP TOOLS OR OTHER OBJECTS ON THE CORES, DO NOT BUMP OR TWIST THE CORES.

To access enthalpic cores for cleaning, remove the air filters.

To clean enthalpic cores, all exposed surfaces must be vacuumed with an attachment having long, soft bristles. The greatest buildup of dirt and dust will normally be on the leading 1–2 inches of the inlet side (closest to the air filters).

When cores are removed from the ERV, they should be immediately protected from accidental damage, water, high heat or flames.

7.6.2 Enthalpic Core Removal

Before removing enthalpic cores, switch the main disconnect to OFF. Open the door to the Energy Recovery Module and simply pull the core straight out of its guides.

7.6.3 Enthalpic Core Replacement

Cores have foam gasketing on one end of each core. The core should be reinstalled so that the foam gasketing is toward the back of the ERV and the core label is facing toward the front.

⚠ WARNING

RISK OF INJURY OR DAMAGE

Motor may have a manual reset thermal protector. Disconnect power before servicing or resetting motor thermal protector. Use caution, motor may be hot. Allow the motor to cool before resetting the thermal protector.

If the motor thermal protector tripped, correct the issue that caused the motor to overheat (e.g. over motor rated amperage or locked rotor).

If the motor has a manual reset thermal protector, the red thermal protector reset button is located on the motor body, on or near the lead end of the motor. If the button does not reset, the motor may still be too hot. Allow the motor to fully cool to reset the thermal protector, you should feel or hear a click when the thermal protector resets while pushing the reset button.

⚠ WARNING

Do not allow the filter access door to drop when unlatched. Injury to personnel or damage to unit may occur.

Keep fingers away from between the filter access door and the blower access panel when unlatching and opening the filter access door. Potential PINCH POINT.

7.7 MAINTENANCE RECORDS

MAINTENANCE LOG					
ENTER DATES OF SERVICE					
OA FILTER CHANGE	RA FILTER CHANGE	INSPECTION/ CLEANING	CLEAN CORE	CLEAN BLOWERS	INITIALS

7.8 SERVICE PARTS

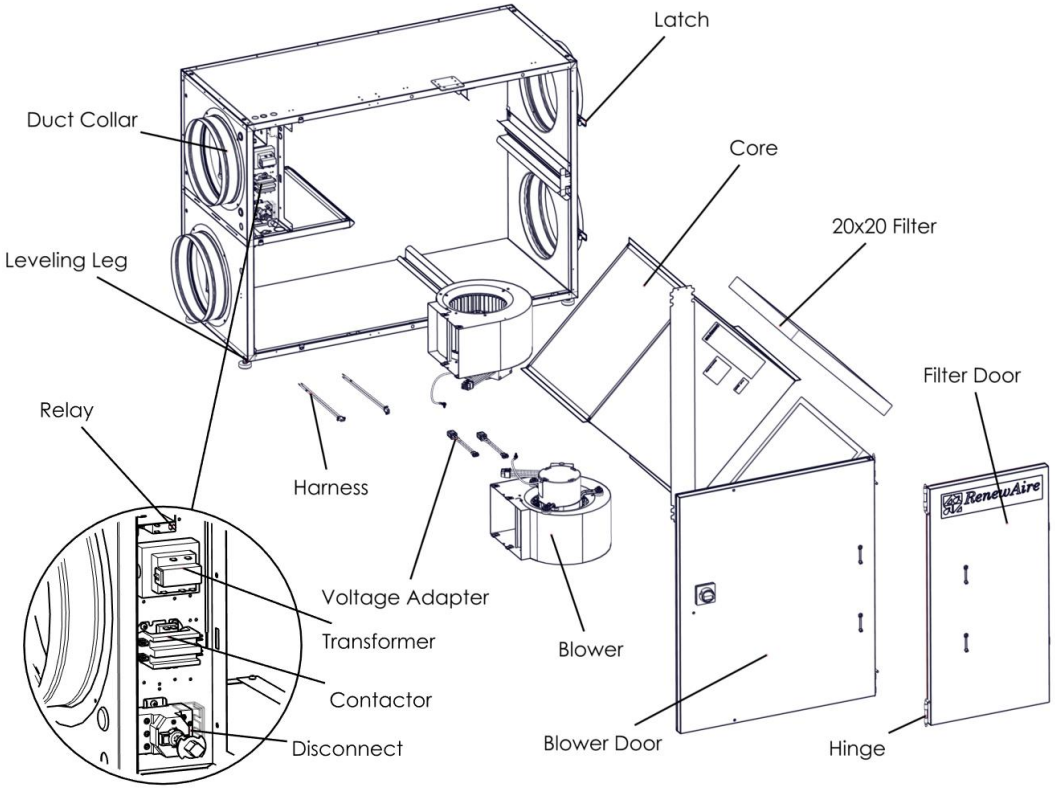


FIGURE 7.8.0 HE1XINH SERVICE PARTS

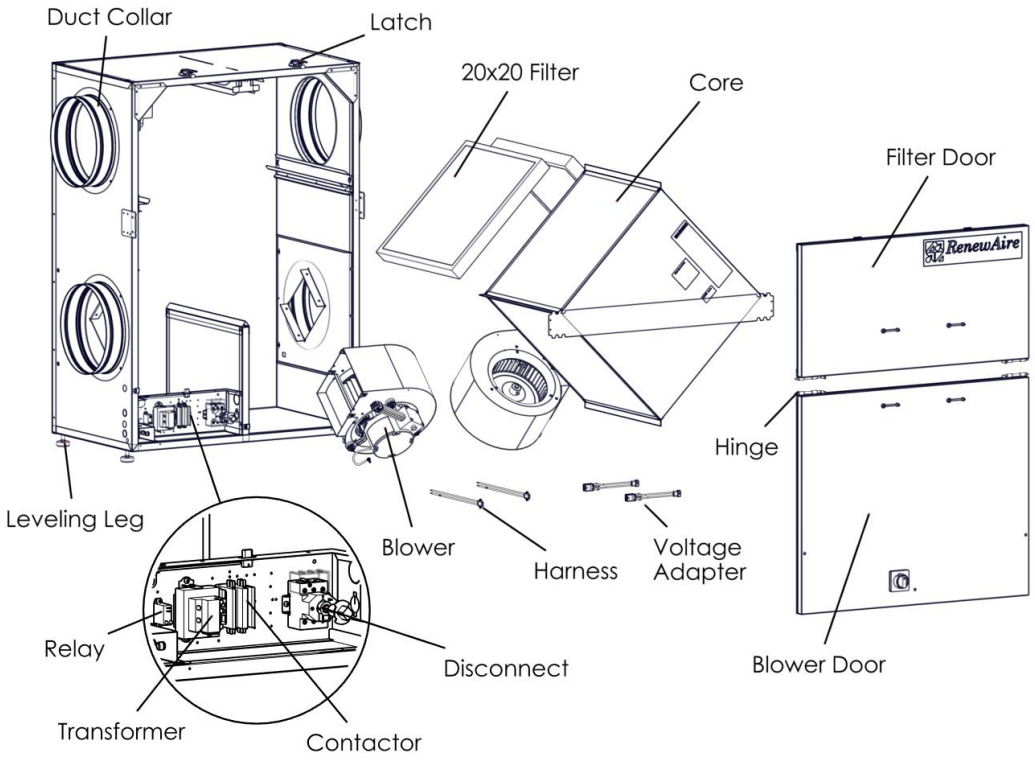


FIGURE 7.8.1 HE1XINV SERVICE PARTS

8.0 TROUBLESHOOTING

If problems occur with a RenewAire ERV, the primary resources for troubleshooting are the unit as-built wiring schematics and the Sequence Of Operation (SOO) for each control scheme.

9.0 FACTORY ASSISTANCE

In the unlikely event that you need assistance from the factory for a specific issue, make sure that you have the information called for in the Unit Information page in the front of this manual. The person you speak with at the factory will need that information to properly identify the unit.

To contact RenewAire Customer Service:

Call 800-627-4499

Email: RenewAireSupport@RenewAire.com

About RenewAire

For over 30 years, **RenewAire has been a pioneer in enhancing indoor air quality (IAQ)** in commercial and residential buildings of every size.This is achieved while maximizing sustainability through our fifth-generation, static-plate, enthalpic-core **Energy Recovery Ventilators (ERVs) that optimize energy efficiency**, lower capital costs via load reduction and decrease operational expenses by minimizing equipment needs, resulting in significant energy savings. Our ERVs are competitively priced, simple to install, easy to use and maintain and have a quick payback. They also enjoy the industry's best warranty with the lowest claims due to long-term reliability derived from innovative design practices, expert workmanship and **Quick Response Manufacturing (QRM)**.

As the pioneer of static-plate core technology in North America, RenewAire is the largest ERV producer in the USA. We're **committed to sustainable manufacturing** and lessening our environmental footprint, and to that end our Waunakee, WI plant is 100% powered by wind turbines. The facility is also one of the few buildings worldwide to be LEED and Green Globes certified, as well as having achieved ENERGY STAR Building status. In 2010, RenewAire joined the Soler & Palau (S&P) Ventilation Group in order to provide direct access to the latest in energy-efficient air-moving technologies. For more information, visit: renewaire.com

201 Raemisch Road | Waunakee, WI | 53597 | 800.627.4499 | RenewAire.com

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